

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in this Application:

Listing of Claims:

1. (Currently amended) A vertical tube and shell heat exchanger comprising:

- a pair of first fluid passing ports for flow of a first fluid through at least one vertical tube;
- an upper tube sheet through which the at least one vertical tube passes, ~~the underside of the upper tube sheet forming a boundary between the upper tube sheet and a shell~~;
- a pair of second fluid passing ports for flow of a second fluid through the vertical shell; and
- a vent pipe having two ends, for venting a gas, the gas locating to the upper portion of the vertical shell during operation of the vertical tube and shell heat exchanger, at least part of one end of the vent pipe being made of the upper tube sheet and being fixed ~~via a flange~~ to the boundary between the upper tube sheet and the vertical shell and the other end of the vent pipe being fluidly connected outside the tube and shell heat exchanger to a second fluid passing port passing the same fluid as the vent pipe, whereby the fluid flowing through the vent pipe drives out the gas, wherein the fluid connection of the vent pipe with the second fluid passing port is further in fluid communication with a pipeline downstream of the fluid connection, the pipeline having at least a portion at a level higher than the upper tube sheet and which comprises a valve located at the high portion thereof, configured to expel the gas.

2-17. (Cancelled).

18. (Currently amended) The vertical tube and shell heat exchanger of claim 1 further comprising:

- a drain pipe at least part of one end of which is made of a lower tube sheet part and reaches the interior of the vertical shell and the other end of which is connected outside the vertical tube and shell heat exchanger to a lower one of the second fluid passing ports passing the same fluid as the drain pipe.

19-25. (Cancelled).

26. (Currently amended) A vertical tube and shell heat exchanger according to claim 18, further comprising a first source of the first fluid, the first source being fluidly connected to the first fluid passing port, and a second source of the second fluid, the second source being fluidly connected to the second fluid passing port, wherein the first fluid comprises ~~an easily~~ polymerizable substance and is passed through the first fluid passing port of the tube and shell heat exchanger and the second fluid comprises a low temperature fluid and is introduced to the second fluid passing port as coolant.

27. (Currently amended) A vertical tube and shell heat exchanger according to claim 26, configured such that when the second fluid flowing through the shell is introduced or discharged through the drain pipe instead of through the second fluid passing port, the second fluid in the lower part of the heat exchanger is stirred as it is fluidized.

28-30. (Cancelled).